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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/825,547	04/14/2004	Joe E. Stout	10012068-4	9111

7590 04/26/2005
HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P. O. Box 272400
Fort Collins, CO 80527-2400

EXAMINER

PHAM, HAI CHI

ART UNIT PAPER NUMBER

2861

DATE MAILED: 04/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/825,547	Applicant(s) STOUT ET AL.	
	Examiner Hai C. Pham	Art Unit 2861	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-24, 26-30, 34-37 and 43-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 22-24, 26, 27 and 43 is/are allowed.
- 6) ☒ Claim(s) 28-30, 34-37, 44 and 45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>07/13/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive with regard to claims 28 and 34, and, therefore, the finality of that action is withdrawn.

Information Disclosure Statement

2. The WO the Search Report PCT/US03/29809 as listed on the information disclosure statement filed 07/13/04 has been considered, but will not be listed on any patent resulting from this application. The above-mentioned information disclosure statement is re-issued to the Applicants to only indicate that the search report has been reviewed by the examiner.

Specification

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means," "said" and "comprise," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The

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disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

4. The abstract of the disclosure is objected to because the Abstract includes a phrase that should be avoided, e.g., "comprises" at line 1. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 28-30 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mrvos et al. (U.S. 6,409,312) in view of Miyashita et al. (U.S. 5,502,470).

Mrvos et al. discloses an ink jet printer and a process of fabricating the ink jet print head, which comprises a resistor (heater resistor 22) on a substrate surface (semiconductor substrate 14), a first polymer layer (first photo-imaged polymer layer 44) formed over the substrate surface and surrounding the resistor, a second polymer layer (second photo-imaged polymer layer 52) formed over the first polymer layer and defining a nozzle (50). With regard to claim 34, Mrvos et al. teaches the first and second polymer layers including a dry film (col. 5, lines 53-65).

Mrvos et al. fails to teach a top coat layer defining a countersunk bore corresponding to the nozzle.

Miyashita et al. discloses an ink jet recording head comprising a heating element (not shown), a first layer (31) formed around on the surface of the substrate (32) to form the pressure chamber (1) for ejecting ink, a second layer (nozzle plate 33) formed over the first layer and defining a nozzle (2) (Fig. 4). Miyashita et al. further teaches a top coat layer forming a protective, water-repellent layer (21) being coated over the whole surface of the nozzle plate defining a countersunk bore associated with the nozzle (Fig. 2).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide the protective top-coat over the second polymer layer of Mrvos et al. device defining a countersunk bore at the nozzle position as taught by Miyashita et al. The motivation for doing so would have been to enable the ink jet recording head excellent in the water-repellent property and durability as suggested by Miyashita et al. (see abstract).

Mrvos et al. further teaches the first and second polymer layers (44 and 52) being SU8 layers (col. 5, line 66 to col. 6, line 10).

7. Claims 35-37 and 44-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mrvos et al. in view of Miyashita et al., as applied to claims 28 and 34 above, and further in view of Radke et al. (U.S. 6,054,011).

Mrvos et al., as modified, discloses all the basic limitations of the claimed invention except for the third layer formed between the first and second layers, and the primer layer formed between the substrate and the first layer.

Radke et al. discloses an ink jet print head comprising a heating element (not shown) (col. 1, lines 20-36), a cover layer supported on the substrate surface, the cover layer defining a firing chamber (32) formed about the heating element and defining a nozzle (17) over the firing chamber, wherein the cover layer includes a first layer (barrier layer 24), a second layer (orifice plate 14) and a third layer (adhesion promoter layer 20) disposed between the barrier layer and the nozzle plate, a top-coat layer (16), and a primer layer (intermediate layer 27) supported by the substrate surface (substrate 29), wherein at least one outer edge of at least one other of the cover layers is offset from the outer edge of the primer layer to expose a surface of the primer layer (Fig. 1).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to incorporate the third layer and the primer layer in the modified device of Mrvos et al. as taught by Radke et al. The motivation for doing so would have been to enhance the adhesion between the plural layers forming the ink jet print head as well as to protect the substrate from heat.

Allowable Subject Matter

8. Claims 22-24, 26-27 and 43 are allowed.

Response to Arguments

9. Applicant's arguments with respect to claims 28-30, 34-37 and 44-45 have been considered but are moot in view of the new grounds of rejection presented in this Office action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai C. Pham whose telephone number is (571) 272-2260. The examiner can normally be reached on M-F 8:30AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on (571) 272-1934. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



HAI PHAM
PRIMARY EXAMINER

April 22, 2005